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GI IMAGE

Fibrohistocytic Proliferation Presenting with Gastric Outlet Obstruction

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We present a rare case of a 74-year-old gentleman who presented to a district hospital with symptoms of vomiting after eating, early satiety, and upper abdominal distension. He had no other major comorbidities, nor was he on any regular medications. A CT scan of his abdomen and pelvis revealed gastric outlet obstruction, an abnormal soft tissue area with an associated stricture at D2/D3 region which was highly suspicious for an underlying duodenal cancer. Upper GI endoscopy was attempted for diagnostic purposes but challenging due to fluid-filled stomach and inability of the patient to tolerate an NG tube. Endoscopy under general anesthetic was subsequently performed with multiple biopsies taken from the abnormal duodenal area. The obstruction failed to resolve and a laparoscopic gastrojejunostomy was carried out for symptomatic relief.

Biopsies revealed tissue within normal limits with some atypia. The patient was referred to our center for consideration of resection for a suspicious obstructing cancer. The radiology images and endoscopy results were reviewed and agreed to be suspicious for duodenal cancer by our multi-disciplinary team. A PET scan was arranged along with further workup for resection by performing a pancreatico-duodenectomy. The PET scan demonstrated moderate uptake in the duodenal wall at the level of the ampulla consistent with the CT findings (Fig. 1) and the clinical suspicion of localized duodenal cancer.

The patient was reviewed at our center and agreed with the proposed plan for a Whipple's procedure. As part of the consenting process, a 10% risk of the histology being benign was quoted. A repeat CT was performed prior to surgery, as COVID-19 delayed his original planned operation date. A lack of tumor progression was confirmed and the CT once again appeared suspicious for duodenal cancer demonstrating thickening of D2/3 with irregularity. On the 1st of May, the patient underwent an uncomplicated Whipple's procedure. The pancreas was noted to be soft and the pancreatic duct caliber small (< 2 mm). No extraluminal mass was identified and no evidence of any intraperitoneal spread. The previous gastrojejunostomy was sufficiently downstream to allow a jejunal limb proximal to this to be bought up for the pancreaticojejunostomy and hepaticojejunostomy formation.

Post operatively his course was complicated by a grade B pancreaticojejunostomy leak which was managed conservatively with antibiotics and radiologically guided drain insertion. His histology demonstrated reactive fibrohistiocytic proliferation, with abundant iron, in keeping with previous hemorrhage (Fig. 2).

Proliferation of fibrohistiocytic cells is a rare cause of duodenal obstruction and gastric outlet obstruction.[1,2] This is the first case we have identified of this necessitating a Whipple's procedure. These are usually slow-growing proliferations, present in the skin and other places, which have low-grade malignant potential. Metastatic disease very rarely develops following excision.[3] The proliferation is usually submucosal with occasional extension into the muscle layer. Often hemorrhage and hemosiderin deposits are present as found in this case. The prognosis for patients who undergo excision is very good. Excision as in this case was necessary because of uncertainty with regard to whether this was indeed a cancer with aggressive malignant potential. However, given the rarity of the condition, if a histological diagnosis had been confidently made preoperatively of this being a fibrohistiocytic proliferation, it may have simply required a period of active observation with imaging and a more informed discussion with the patient regarding risk and benefit of surgery.

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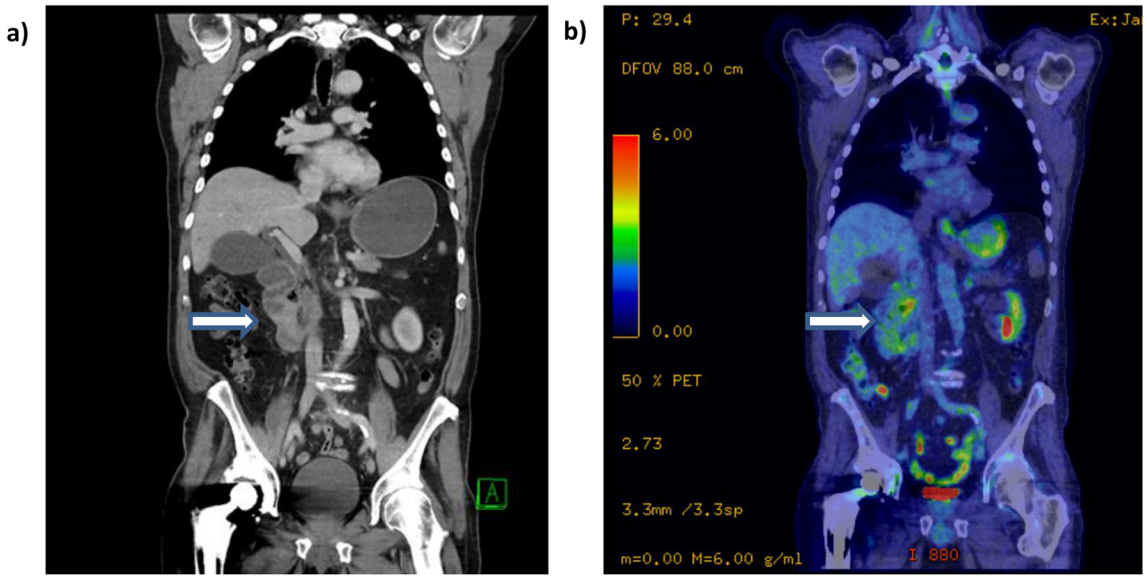

Fig. 1 **a** Coronal sections CT scan with IV contrast illustrating mass obstructing duodenum causing proximal dilation with gastric outlet obstruction. **b** PET Scan illustrating moderate uptake in the proximal duodenum

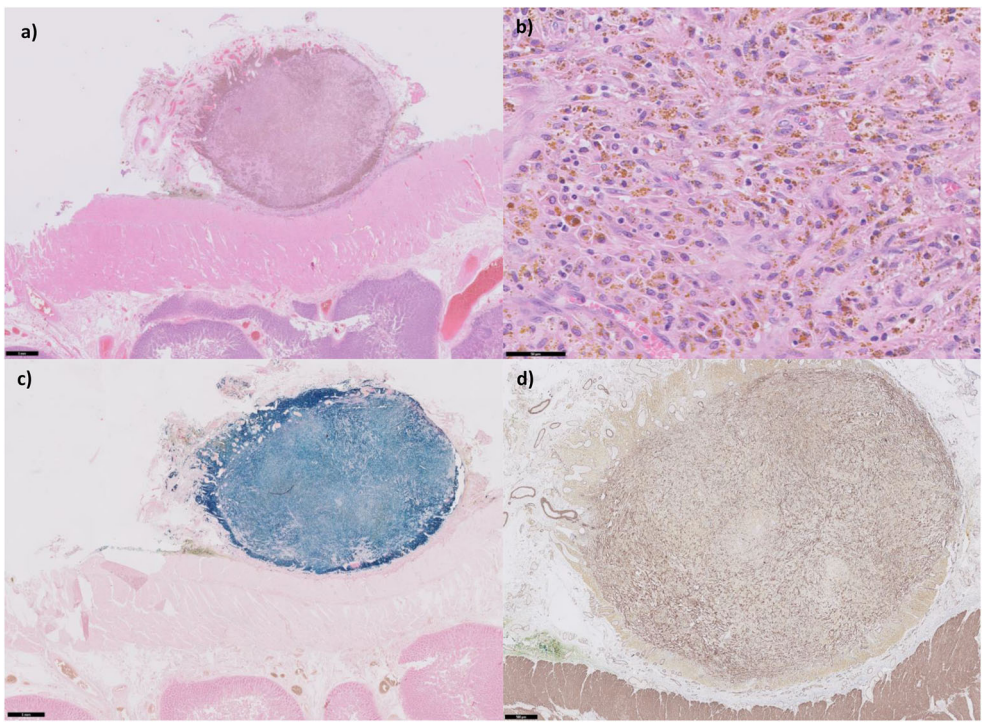

Fig. 2 **a** × 0.5H&E stain; subserosal circumscribed spindle cell proliferation. **b** × 40 H&E stain; bland spindle cells with abundant hemosiderin pigment in the background. **c** Perls: extensive iron deposition within the lesion highlighted by Perls stain. **d** PHM1: the spindle cells express PGM1 supporting histiocytic origin

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